

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. (Previously presented) A semiconductor device with a multilayered structure comprising a copper film interconnect formed on one primary surface of a semiconductor substrate, and a neighboring film formed in contact with said copper film interconnect, wherein said neighboring film includes a ruthenium film which substantially prevents voids due to electromigration of copper of the copper film, and said copper film interconnect has a multilayered structure comprising a copper film as formed through sputtering and a copper film as formed through plating.

2. (Previously presented) A semiconductor device with a multilayered structure comprising a copper film interconnect formed on one primary surface of a semiconductor substrate, and a neighboring film formed in contact with said copper film interconnect, wherein said neighboring film includes a ruthenium film which substantially prevents voids due to electromigration of copper of the copper film, and said copper film interconnect has a multilayered structure comprising a copper film as formed through physical vapor deposition and a copper film as formed through chemical vapor deposition.

3. (Previously presented) A semiconductor device with a multilayered structure comprising a copper film interconnect formed on one primary surface of a semiconductor substrate, a neighboring film formed in contact with said copper film

interconnect, and a dielectric film positioned such that the neighboring film is between the dielectric film and the copper film interconnect, wherein said neighboring film is formed of ruthenium as the primary constituent element, and is formed through sputtering, and said copper film interconnect has a multilayered structure comprising a copper film as formed through sputtering and a copper film as formed through plating or chemical vapor deposition, whereby voids due to electromigration of the copper is substantially avoided.

4. (Canceled).

5. (Previously Presented) A semiconductor device with a structure comprising a copper film interconnect formed on one primary surface of a semiconductor substrate, a neighboring film formed in contact with said copper film interconnect, and a plug formed in contact with said neighboring film, wherein said neighboring film is formed of ruthenium as the primary constituent element, said plug is formed of ruthenium as the primary constituent element, and at least one of said copper film interconnect and said plug contains a layer as formed through physical vapor deposition.

6. (Previously presented) A semiconductor device with a structure comprising a copper film interconnect formed on one primary surface of a semiconductor substrate, a neighboring film formed in contact with said copper film interconnect, a plug formed in contact with said neighboring film, and a diffusion barrier formed in contact with said plug and said neighboring film, wherein said neighboring film includes a ruthenium film, said plug is formed of a ruthenium film,

said diffusion barrier is formed of a titanium nitride film, and at least one of said copper film interconnect and said neighboring film is a film formed through sputtering, wherein the neighboring film and the plug substantially prevent voids due to electromigration of the copper or platinum of the copper or platinum film.

7-11. (Canceled).

12. (Previously presented) The semiconductor device according to claim 38, wherein the diffusion barrier layer is at least one film made of material selected from the group consisting of titanium nitride, tungsten and tantalum.

13. (Previously presented) The semiconductor device according to claim 38, wherein the platinum film is a film formed by physical vapor deposition.

14. (Previously presented) The semiconductor device according to claim 38, wherein said neighboring film is a film formed by physical vapor deposition.

15. (Previously presented) The semiconductor device according to claim 38, wherein both the neighboring film and the platinum film are films formed by physical vapor deposition.

16-31. (Canceled).

32. (Previously presented) A semiconductor device with a multilayered structure comprising a copper film interconnect formed on one primary surface of a

semiconductor substrate, and a neighboring film formed in contact with said copper film interconnect, wherein said neighboring film is formed of ruthenium as the primary constituent element, and is formed through sputtering, so as to restrain formation of voids due to electromigration of copper of the copper film interconnect, and said copper film interconnect has a multilayered structure comprising a copper film as formed through sputtering and a copper film as formed through plating or chemical vapor deposition.

33-37. (Canceled).

38. (Previously presented) A semiconductor device having a layered interconnection structure including a copper film or a platinum film formed overlying a surface of a semiconductor substrate, wherein the layered interconnection structure includes the copper or platinum film and a neighboring film adjacent the copper or platinum film, the neighboring film including a material selected from a first group consisting of rhodium, ruthenium, iridium, osmium and platinum when the layered interconnection structure includes a copper film and the neighboring film including a material selected from a second group consisting of rhodium, ruthenium, iridium and osmium when the layered interconnection structure includes a platinum film, at least one of (a) the copper or platinum film and (b) the neighboring film being a film made by physical vapor deposition, the device further comprising a diffusion barrier layer, said neighboring film being sandwiched between said copper or platinum film and said diffusion barrier layer, wherein the neighboring film substantially prevents voids due to electromigration of the copper or platinum of the copper or platinum film, and wherein the layered interconnection structure includes the platinum film.

39. (New) A semiconductor device with a structure comprising a copper film interconnect formed on one primary surface of a semiconductor substrate, a neighboring film formed in contact with said copper film interconnect, and a plug formed in contact with said neighboring film, wherein said neighboring film is formed of ruthenium as the primary constituent element, and said plug is formed of ruthenium as the primary constituent element.